



INSTITUT PRO TESTOVÁNÍ A CERTIFIKACI, a. s.

třída Tomáše Bati 299, Louky, 763 02 Zlín, Czech Republic

TESTING LABORATORY - TESTING DIVISION

issues

ATTEST

No. 472118465-01

On samples:

**Wrapping papers:
LUKABROWN ALPHA (LBA),
LUKABROWN ALPHA/ M (LBA/M)
and LUKABROWN GAMMA (LBG)**

Client:

**Balsac papermill s.r.o.,
Lukavice 21, 789 01 Zábřeh, Czech Republic, ID: 01610368**

Evaluation of the measured parameters:

The evaluated parameters mentioned on the pages 3 – 12 of the Attest meet hygienic requirements for the **products made of paper** given by Health Ministry Decree No. 38/2001 Coll., “*Hygienic requirements for materials intended to come into contact with foodstuffs*”, as amended and German Recommendation BfR (Bundesinstitut für Risikobewertung - Federal Institute for Risk Assessment) XXXVI Paper and cardboard for food contact (including the requirements for recycled fibres).

The evaluated samples meet requirements of the article 3 of **Regulation (EC) No. 1935/2004 of the European Parliament and of the Council** on materials and articles intended to come into contact with food.

This Attest was issued on the basis of the accredited test report Ref. No. 472118465-01 issued on February 28, 2025.

Issued on: February 28, 2025
Valid till: February 28, 2028



Dipl. Ing. Jiří Samsoněk, Ph.D.
Head of the testing laboratory

Conditions for use of the Attest and associated information:

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Submitted samples:

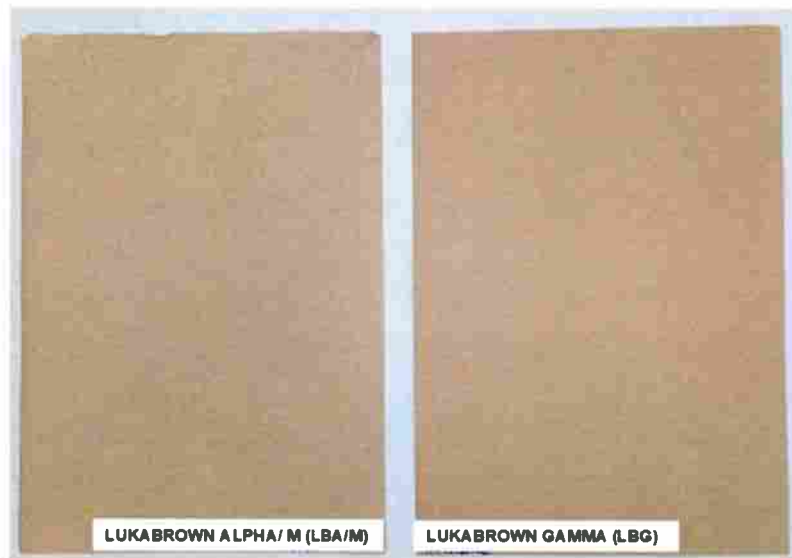


Fig. No. 1: Wrapping papers: LUKABROWN ALPHA/ M (LBA/M) and LUKABROWN GAMMA (LBG)



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ATTEST
No. 472118465-01
Values obtained

Assessment of organoleptic properties

Wrapping paper LUKABROWN ALPHA/ M (LBA/M)

Food simulant		ČSN EN 1230-2 biscuits		ČSN EN 1230-2 chocolate		ČSN EN 1230-1 without food simulant
Assessor No.	Unit	Odour	Odour	Odour	Flavour	Odour
1	level	0	0	0	0	0
2	level	0	0	0	0	0
3	level	0	0	0	0	0
4	level	0	0	0	0	1
5	level	0	0	0	0	1
6	level	0	0	0	0	1
Mean	level	0	0	0	0	0.5

Wrapping paper LUKABROWN GAMMA (LBG)

Food simulant		ČSN EN 1230-2 biscuits		ČSN EN 1230-2 chocolate		ČSN EN 1230-1 without food simulant
Assessor No.	Unit	Odour	Odour	Odour	Flavour	Odour
1	level	0	0	0	0	1
2	level	0	0	0	0	1
3	level	0	0	0	0	0
4	level	0	0	0	0	1
5	level	0	0	0	0	0
6	level	0	0	0	0	1.5
Mean	level	0	0	0	0	1

Note to Tables:

Off-odour and off-taste scale:

0 = No perceptible off-odour or off-taste

1 = Just perceptible off-odour or off-taste (off-odour and off-taste determination is very difficult)

2 = Slightly perceptible off-odour or off-taste

3 = Clearly perceptible off-odour or off-taste

4 = Strong off-odour or off-taste

According to Regulation (EC) No. 1935/2004 of the European Parliament and of the Council the articles shall not cause deterioration in the organoleptic characteristics of food.



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Test results according to the requirements of Suppl. No. 12 to Decree No. 38/2001 Coll.

Wrapping paper LUKABROWN ALPHA/ M (LBA/M)

Parameter	Unit	Value obtained ¹⁾	Limit ²⁾
Assessment of the paper material			
Moisture	% w/w	5.46±0.05	max. 8.0
PCB ³⁾	mg/kg of dry matter	< 0.15	max. 2.0
Polychlorinated phenols ⁴⁾	mg/kg of dry matter	< 0.05	max. 0.05
PAH ⁵⁾	mg/kg of dry matter	<0.01	max. 0.05
Content of the substances in the leachate (20 dm² / 1000 ml of distilled water, 20°C / 24 h)			
Formaldehyde	mg of CH ₂ O/ dm ²	< 0.02	max. 0.10 max. 1.0 ⁷⁾
Total nitrogen	mg of N / dm ²	< 0.03	max. 0.2
Phthalates ⁶⁾	mg/dm ²	< 0.02	max. 0.20
Primary aromatic amines	mg /dm ²	<0.002	max. 0.002
Phenolic compound	mg of phenol /dm ²	< 0.01	max. 0.05
Fluorescence (365 nm)	-	- ⁸⁾	No fluorescence
Mercury	mg/kg of dry matter	< 0.05	max. 0.3
Cadmium	mg/kg of dry matter	< 0.05	max. 0.5
Chromium	mg/kg of dry matter	< 0.05	max. 0.1
Lead	mg/kg of dry matter	< 0.05	max. 3.0
Arsenic	mg/kg of dry matter	< 0.05	max. 3.0

Notes to Table:

- 1) Symbol „<“ means less than LOQ (limit of quantification) of the analytical method. The test results are expressed including the reported expanded uncertainty based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95%
- 2) Limit values according to the Ministry of Health Decree No. 38/2001 Coll., as amended
- 3) PCB – polychlorinated biphenyls, sum of congeners 28, 52, 101, 118, 138, 153 a 180
- 4) Polychlorinated phenols expressed as pentachlorophenol
- 5) PAH - polycyclic aromatic hydrocarbons; sum of: benzo/b/fluoranthene, benzo/k/fluoranthene, benzo/a/pyrene, dibenzo/a,h/anthracene, benzo/g,h,i/perylene, indeno/1,2,3-c,d/pyrene expressed as benzo/a/pyrene
- 6) Sum of dibutyl phthalate (DBP), di-(2-ethylhexyl) phthalate (DEHP), diisodecyl phthalate (DIDP), benzylbutyl phthalate (BBP), diisononyl phthalate (DINP), di-n-octyl phthalate (DNOP)
- 7) Limit value according to German Recommendation BfR XXXVI Paper and cardboard for contact with foodstuffs.
- 8) The alternative test was performed – see the table on the page 6



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Wrapping paper LUKABROWN GAMMA (LBG)

Parameter	Unit	Value obtained ¹⁾	Limit ²⁾
Assessment of the paper material			
Moisture	% w/w	4.81±0.04	max. 8.0
PCB ³⁾	mg/kg of dry matter	< 0.15	max. 2.0
Polychlorinated phenols ⁴⁾	mg/kg of dry matter	< 0.05	max. 0.05
PAH ⁵⁾	mg/kg of dry matter	<0.01	max. 0.05
Content of the substances in the leachate (20 dm² / 1000 ml of distilled water, 20°C / 24 h)			
Formaldehyde	mg of CH ₂ O/ dm ²	< 0.02	max. 0.10 max. 1.0 ⁷⁾
Total nitrogen	mg of N / dm ²	< 0.03	max. 0.2
Phthalates ⁶⁾	mg/dm ²	< 0.02	max. 0.20
Primary aromatic amines	mg /dm ²	<0.002	max. 0.002
Phenolic compound	mg of phenol /dm ²	< 0.01	max. 0.05
Fluorescence (365 nm)	-	- ⁸⁾	No fluorescence
Mercury	mg/kg of dry matter	< 0.05	max. 0.3
Cadmium	mg/kg of dry matter	< 0.05	max. 0.5
Chromium	mg/kg of dry matter	< 0.05	max. 0.1
Lead	mg/kg of dry matter	< 0.05	max. 3.0
Arsenic	mg/kg of dry matter	< 0.05	max. 3.0

Notes to Table:

- 1) Symbol „<“ means less than LOQ (limit of quantification) of the analytical method. The test results are expressed including the reported expanded uncertainty based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95%
- 2) Limit values according to the Ministry of Health Decree No. 38/2001 Coll., as amended
- 3) PCB – polychlorinated biphenyls, sum of congeners 28, 52, 101, 118, 138, 153 a 180
- 4) Polychlorinated phenols expressed as pentachlorophenol
- 5) PAH - polycyclic aromatic hydrocarbons; sum of: benzo/b/fluoranthene, benzo/k/fluoranthene, benzo/a/pyrene, dibenzo/a,h/anthracene, benzo/g,h,i/perylen, indeno/1,2,3-c,d/pyrene expressed as benzo/a/pyrene
- 6) Sum of dibutyl phthalate (DBP), di-(2-ethylhexyl) phthalate (DEHP), diisodecyl phthalate (DIDP), benzylbutyl phthalate (BBP), diisononyl phthalate (DINP), di-n-octyl phthalate (DNOP)
- 7) Limit value according to German Recommendation BfR XXXVI Paper and cardboard for contact with foodstuffs.
- 8) The alternative test was performed – see the table on the page 6



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Test results according to the requirements of German Recommendation BfR XXXVI

Determination of metals in the leachate (acc. to ČSN EN 645)

Wrapping paper LUKABROWN ALPHA/ M (LBA/M)

Parameter	Unit	Value obtained ¹⁾	Limit ²⁾
Cd - Cadmium	mg/l of extract	< 0.001	max. 0.005
Cr - Chromium	mg/l of extract	< 0.005 ³⁾	not-detectable
Pb - Lead	mg/l of extract	< 0.005	max. 0.01
Al - Aluminium	mg/l of extract	0.13±0.03	max. 1.0

Wrapping paper LUKABROWN GAMMA (LBG)

Parameter	Unit	Value obtained ¹⁾	Limit ²⁾
Cd - Cadmium	mg/l of extract	< 0.001	max. 0.005
Cr - Chromium	mg/l of extract	< 0.005 ³⁾	not-detectable
Pb - Lead	mg/l of extract	< 0.005	max. 0.01
Al - Aluminium	mg/l of extract	0.22±0.05	max. 1.0

Notes to Tables:

- 1) Symbol „<“ means less than LOQ (limit of quantification) of the analytical method. The test results are expressed including the reported expanded uncertainty based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95%
- 2) Limit value according to BfR XXXVI Paper and cardboard for contact with foodstuffs
- 3) Symbol „<“ means less than limit of detection of the analytical method

Determination of fastness of fluorescent whitened paper according to ČSN EN 648 procedure A – long-term contact

Wrapping paper LUKABROWN ALPHA/ M (LBA/M)

Simulant	Unit	Value obtained ¹⁾
Distilled water	level	5
3% acetic acid	level	5
Alkaline salt solution (pH 8.6)	level	5
Olive oil	level	5
Limit ²⁾	level	Min. 5

Wrapping paper LUKABROWN GAMMA (LBG)

Simulant	Unit	Value obtained ¹⁾
Distilled water	level	5
Alkaline salt solution (pH 8.6)	level	5
Olive oil	level	5
Limit ²⁾	level	Min. 5

Notes to Tables:

- 1) 5 level correspond to the zero content of fluorescent brighteners that migrate into filter paper = good fastness
- 2) Limit value according to BfR XXXVI Paper and cardboard for contact with foodstuffs

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Determination of primary aromatic amines (PAAs) in leachate Wrapping paper LUKABROWN ALPHA/ M (LBA/M) and LUKABROWN GAMMA (LBG)

leachate: distilled water, 20 °C / 24 h; 10 g / 250 ml

Primary aromatic amine (PAA)	CAS No.	Unit ¹⁾	Test result ²⁾		Limit ³⁾
			LBA/M	LBG	
PAAs classified as carcinogens in classes 1A and 1B of the CLP Regulation (EC) 1272/2008					
4-Amino-biphenyle	92-67-1	mg/kg	< 0.002	< 0.002	N.D.
Benzidine	92-87-5	mg/kg	< 0.002	< 0.002	N.D.
4-Chlor-o-toluidine	95-69-2	mg/kg	< 0.002	< 0.002	N.D.
2-Naphthylamine	91-59-8	mg/kg	< 0.002	< 0.002	N.D.
o-Aminoazotoluene	97-56-3	mg/kg	< 0.002	< 0.002	N.D.
p-Chlor -aniline	106-47-8	mg/kg	< 0.002	< 0.002	N.D.
2,4-Diamino-anisole	615-05-4	mg/kg	< 0.002	< 0.002	N.D.
4,4'-Diamino-diphenylmethane	101-77-9	mg/kg	< 0.002	< 0.002	N.D.
3,3'-Dichlor-benzidine	91-94-1	mg/kg	< 0.002	< 0.002	N.D.
3,3'-Dimethoxy-benzidine	119-90-4	mg/kg	< 0.002	< 0.002	N.D.
3,3'-Dimethyl-benzidine	119-93-7	mg/kg	< 0.002	< 0.002	N.D.
3,3'-Dimethyl-4,4'-diaminodiphenylmethane	838-88-0	mg/kg	< 0.002	< 0.002	N.D.
p-Cresidine	120-71-8	mg/kg	< 0.002	< 0.002	N.D.
4,4'-Methylen-bis(2-chloraniline)	101-14-4	mg/kg	< 0.002	< 0.002	N.D.
4,4'-Oxy-dianiline	101-80-4	mg/kg	< 0.002	< 0.002	N.D.
4,4'-Thio-dianiline	139-65-1	mg/kg	< 0.002	< 0.002	N.D.
o-Toluidine	95-53-4	mg/kg	< 0.002	< 0.002	N.D.
2,4-Toluenediamine	95-80-7	mg/kg	< 0.002	< 0.002	N.D.
2,4,5-Trimethyl-aniline	137-17-7	mg/kg	< 0.002	< 0.002	N.D.
o-Anisidine	90-04-0	mg/kg	< 0.002	< 0.002	N.D.
p-Aminoazobenzene	60-09-3	mg/kg	< 0.002	< 0.002	N.D.
Screening for others	4)	-	No PAA detected ⁵⁾		-
Sum of detected PAAs	-	mg/kg	-	-	max. 0.01

Notes to Table:

- 1) Expressed as mg of the substance per kg of food simulant
- 2) Symbol „<“ means less than limit of detection of the analytical method
- 3) Limit values according to Commission Regulation EU 10/2011 as amended
- 4) These PAAs were screened – CAS No. 95-68-1, CAS No. 87-62-7, CAS No. 2243-62-1, CAS No. 62-53-3, CAS No. 95-51-2, CAS No. 108-42-9, CAS No. 106-49-0, CAS No. 106-50-3, CAS No. 823-40-5, CAS No. 121-69-7, CAS No. 6582-52-1, CAS No. 1208-52-2, CAS No. 6358-64-1, CAS No. 95-82-9, CAS No. 94-70-2, CAS No. 2835-68-9, CAS No. 81-16-3, CAS No. 88-44-8, CAS No. 49564-57-0, CAS No. 95-23-8, CAS No. 132-32-1, CAS No. 95-54-5, CAS No. 67014-36-2, CAS No. 156-43-4, CAS No. 90-41-5, CAS No. 99-55-8

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5) LOD (limit of detection) of individual PAA is 0,005 mg/kg
N.D. = not detectable; limit of detection 0,002 mg/kg

Determination of glyoxal according to DIN 54603 in the leachate (acc. to ČSN EN 645)

Wrapping paper LUKABROWN ALPHA/ M (LBA/M)

Parameter	Unit	Value obtained ¹⁾	Uncertainty ²⁾	Limit ³⁾
Glyoxal content	mg/dm ²	0.0019	0.0002	max. 1.5
	mg/kg of dry matter	3.18	0.22	-

Wrapping paper LUKABROWN GAMMA (LBG)

Parameter	Unit	Value obtained ¹⁾	Uncertainty ²⁾	Limit ³⁾
Glyoxal content	mg/dm ²	0.0012	0.0004	max. 1.5
	mg/kg of dry matter	3.30	0.66	-

Notes to Table:

- 1) Symbol „<“ means less than LOQ (limit of quantification) of the analytical method.
- 2) The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95%.
- 3) Limit value according to BfR XXXVI Paper and cardboard for contact with foodstuffs

Determination of Kathon (CAS 55965-84-9) in the leachate (acc. to ČSN EN 645)

Wrapping paper LUKABROWN ALPHA/ M (LBA/M)

Parameter	Unit	Value obtained ¹⁾	Limit ²⁾
5-Chloro-2-methyl-3(2H)-isothiazolone with 2-methyl-3(2H)-isothiazolone (3:1) (Kathon), CAS 55965-84-9	µg/dm ²	< 0.2	max. 25

Wrapping paper LUKABROWN GAMMA (LBG)

Parameter	Unit	Value obtained ¹⁾	Limit ²⁾
5-Chloro-2-methyl-3(2H)-isothiazolone with 2-methyl-3(2H)-isothiazolone (3:1) (Kathon), CAS 55965-84-9	µg/dm ²	< 0.2	max. 25

Notes to Table:

- 1) Symbol „<“ means less than LOQ (limit of quantification) of the analytical method.
- 2) Limit value according to BfR XXXVI Paper and cardboard for contact with foodstuffs

Determination of colour fastness of dyed paper – procedure A – long duration contact

Wrapping paper LUKABROWN ALPHA/ M (LBA/M)

Simulant	Unit	Value obtained ¹⁾
Distilled water	level	5
3% acetic acid	level	5
Alkaline salt solution (pH 8.6)	level	5
Olive oil	level	5
Limit ²⁾	level	Min. 5

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Wrapping paper LUKABROWN GAMMA (LBG)

Simulant	Unit	Value obtained ¹⁾
Distilled water	level	5
3% acetic acid	level	5
Alkaline salt solution (pH 8.6)	level	5
Olive oil	level	5
Limit ²⁾	level	Min. 5

Notes to Tables:

- 1) Level 5 = good fastness (no visible colour migration into filter paper)
- 2) Limit value according to German Recommendation BfR XXXVI Paper and cardboard for contact with foodstuffs

Test results of the specific migration of substances restricted by SML in recycled papers according to German Recommendation BfR XXXVI

Wrapping paper LUKABROWN ALPHA/ M (LBA/M)

Parameter	Unit ¹⁾	Value obtained ²⁾	Limit ³⁾
Simulant: distilled water, 20 °C / 24 h			
4,4'-bis(dimethylamino)benzophenone, CAS 90-93-7	mg/kg	< 0,005	max. 0.01
Diethylhexyl phthalate, CAS 117-81-7	mg/kg	< 0,05	max. 0.6
Di-n-butyl phthalate, CAS 84-74-2	mg/kg	< 0,05	max. 0.12
Diisobutyl phthalate, CAS 84-69-5	mg/kg	< 0,05	max. 0.15
Benzophenone, CAS 119-61-9	mg/kg	< 0,06	max. 0.6
Bisphenol A, CAS 80-05-7	mg/kg	0.0020±0.0002	max. 0.05
Bisphenol S, CAS 80-09-1	mg/kg	0.007±0.001	max. 0.05
Simulant: substitute fatty simulant 95% ethanol, 20 °C / 24 h			
4,4'-bis(dimethylamino)benzophenone, CAS 90-93-7	mg/kg	0.0017±0.0002	max. 0.01
Diethylhexyl phthalate, CAS 117-81-7	mg/kg	0.009±0.001	max. 0.6
Di-n-butyl phthalate, CAS 84-74-2	mg/kg	0.003±0.001	max. 0.12
Diisobutyl phthalate, CAS 84-69-5	mg/kg	< 0.05	max. 0.15
Benzophenone, CAS 119-61-9	mg/kg	< 0.06	max. 0.6
Bisphenol A, CAS 80-05-7	mg/kg	0.0035±0.0004	max. 0.05
Bisphenol S, CAS 80-09-1	mg/kg	0.006±0.001	max. 0.05

Notes to Table:

- 1) Expressed as mg of substance per kg of simulant for the migration ratio 60 cm² / 100 ml
- 2) Symbol „<“ means less than LOQ (limit of quantification) of the analytical method. The test results are expressed including the reported expanded uncertainty based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95%
- 3) Limit values according to BfR XXXVI Paper and cardboard for contact with foodstuffs
- 4) The sum of DBP, DIBP and DEHP, calculated as DEHP equivalents using the equation below, must not exceed 0.6 mg/kg. $DBP \times 5 + DIBP \times 4 + DEHP \times 1$

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Wrapping paper LUKABROWN ALPHA/ M (LBA/M)

Parameter	Unit ¹⁾	Value obtained ²⁾	Limit ³⁾
Simulant: substitute fatty simulant isoctane, 20 °C / 24 h			
4,4'-bis(dimethylamino)benzophenone, CAS 90-93-7	mg/kg	<0.005	max. 0.01
Diethylhexyl phthalate, CAS 117-81-7	mg/kg	0.006±0.001	max. 0.6
Di-n-butyl phthalate, CAS 84-74-2	mg/kg	< 0.05	max. 0.12
Diisobutyl phthalate, CAS 84-69-5	mg/kg	< 0.05	max. 0.15
Benzophenone, CAS 119-61-9	mg/kg	< 0.06	max. 0.6
Bisphenol A, CAS 80-05-7	mg/kg	< 0.005	max. 0.05
Bisphenol S, CAS 80-09-1	mg/kg	< 0.01	max. 0.05

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- 1) Expressed as mg of substance per kg of simulant for the migration ratio 60 cm² / 100 ml
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- 3) Limit values according to BfR XXXVI Paper and cardboard for contact with foodstuffs
- 4) The sum of DBP, DIBP and DEHP, calculated as DEHP equivalents using the equation below, must not exceed 0.6 mg/kg. $DBP \times 5 + DIBP \times 4 + DEHP \times 1$

Wrapping paper LUKABROWN GAMMA (LBG)

Parameter	Unit ¹⁾	Value obtained ²⁾	Limit ³⁾
Simulant: distilled water, 20 °C / 24 h			
4,4'-bis(dimethylamino)benzophenone, CAS 90-93-7	mg/kg	< 0.005	max. 0.01
Diethylhexyl phthalate, CAS 117-81-7	mg/kg	< 0.05	max. 0.6
Di-n-butyl phthalate, CAS 84-74-2	mg/kg	< 0.05	max. 0.12
Diisobutyl phthalate, CAS 84-69-5	mg/kg	< 0.05	max. 0.15
Benzophenone, CAS 119-61-9	mg/kg	< 0.06	max. 0.6
Bisphenol A, CAS 80-05-7	mg/kg	0.004±0.0004	max. 0.05
Bisphenol S, CAS 80-09-1	mg/kg	0.016±0.002	max. 0.05
Simulant: substitute fatty simulant 95% ethanol, 20 °C / 24 h			
4,4'-bis(dimethylamino)benzophenone, CAS 90-93-7	mg/kg	0.0030±0.0004	max. 0.01
Diethylhexyl phthalate, CAS 117-81-7	mg/kg	0.017	max. 0.6
Di-n-butyl phthalate, CAS 84-74-2	mg/kg	0.005	max. 0.12
Diisobutyl phthalate, CAS 84-69-5	mg/kg	< 0.05	max. 0.15
Benzophenone, CAS 119-61-9	mg/kg	< 0.06	max. 0.6
Bisphenol A, CAS 80-05-7	mg/kg	0.006±0.001	max. 0.05
Bisphenol S, CAS 80-09-1	mg/kg	0.010±0.001	max. 0.05

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ATTEST

No. 472118465-01

Wrapping paper LUKABROWN GAMMA (LBG)

Parameter	Unit ¹⁾	Value obtained ²⁾	Limit ³⁾
Simulant: substitute fatty simulant isooctane, 20 °C / 24 h			
4,4'-bis(dimethylamino)benzophenone, CAS 90-93-7	mg/kg	<0.005	max. 0.01
Diethylhexyl phthalate, CAS 117-81-7	mg/kg	0.012±0.002	max. 0.6
Di-n-butyl phthalate, CAS 84-74-2	mg/kg	0.003±0.001	max. 0.12
Diisobutyl phthalate, CAS 84-69-5	mg/kg	< 0.05	max. 0.15
Benzophenone, CAS 119-61-9	mg/kg	< 0.06	max. 0.6
Bisphenol A, CAS 80-05-7	mg/kg	< 0.005	max. 0.05
Bisphenol S, CAS 80-09-1	mg/kg	< 0.01	max. 0.05

Notes to Tables:

- Expressed as mg of substance per kg of simulant for the migration ratio 60 cm² / 100 ml
- Symbol, "<" means less than LOQ (limit of quantification) of the analytical method. The test results are expressed including the reported expanded uncertainty based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95%
- Limit values according to BfR XXXVI Paper and cardboard for contact with foodstuffs
- The sum of DBP, DIBP and DEHP, calculated as DEHP equivalents using the equation below, must not exceed 0.6 mg/kg. $DBP \times 5 + DIBP \times 4 + DEHP \times 1$

Determination of diisopropylnaphthalene

Wrapping paper LUKABROWN ALPHA/ M (LBA/M)

Parameter	Unit	Value obtained ¹⁾
Diisopropylnaphthalene content	mg/kg of dry matter	2.09±0.22

Wrapping paper LUKABROWN GAMMA (LBG)

Parameter	Unit	Value obtained ¹⁾
Diisopropylnaphthalene content	mg/kg of dry matter	2.97±0.32

Note to Tables:

- The test results are expressed including the reported expanded uncertainty based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95%

Test results of the transfer of antimicrobial constituents according to ČSN EN 1104

Wrapping paper LUKABROWN ALPHA/ M (LBA/M)

Test microorganisms	Unit	Test result ¹⁾
Bacteria <i>Bacillus subtilis</i>	size zone	no inhibition zone – no transfer of water-soluble antimicrobial constituents
fungus <i>Aspergillus niger</i>	size zone	no inhibition zone – no transfer of water-soluble antimicrobial constituents

Note to Table:

- no inhibition zone = no growth of microorganism in the surrounding area of the test pieces

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ATTEST No. 472118465-01

Wrapping paper LUKABROWN GAMMA (LBG)

Test microorganisms	Unit	Test result ¹⁾
Bacteria <i>Bacillus subtilis</i>	size zone	no inhibition zone – no transfer of water-soluble antimicrobial constituents
fungus <i>Aspergillus niger</i>	size zone	no inhibition zone – no transfer of water-soluble antimicrobial constituents

Note to Table:

¹⁾ no inhibition zone = no growth of microorganism in the surrounding area of the test pieces



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INSTITUT PRO TESTOVÁNÍ A CERTIFIKACI, a. s.
třída Tomáše Bati 299, Louky, 763 02 Zlín, Czech Republic
Testing Laboratory - D2

Attest No. 472118465-01

Sample description and identification:

ITC's number	Sample identification by client	Description of submitted sample
472118465/01	Wrapping paper LUKABROWN ALPHA/ M (LBA/M)	Brown paper as A4 sheets - see the figure No. 1
472118465/02	Wrapping paper LUKABROWN GAMMA (LBG)	

Together with the samples, the client provided information on the composition and recipe of individual products and safety data sheets of raw materials. Due to the very similar recipes of all submitted samples, the test were performed only on the LBA/M and LBG paper as a types representative of the products line.

Work requested:

Evaluation of hygienic properties of the sample according to Decree of Health Ministry No. 38/2001 Coll. *for articles intended into a contact with foodstuffs*, as amended, in compliance with Law of Czech Republic No. 258/2000 Coll. *about protection of the public health*, as amended and evaluation of selected hygienic properties of the sample according to German Recommendation BfR XXXVI *Paper and cardboard for foodstuffs*.

The evaluation of hygienic properties of the sample is based on European legislation in the sense of Regulation (EC) No. 1935/2004 of the European Parliament and of the Council *on materials and articles intended to come into contact with food*.

Opinions and interpretations:

The evaluated products "**Wrapping papers: LUKABROWN ALPHA (LBA), LUKABROWN ALPHA/ M (LBA/M) and LUKABROWN GAMMA (LBG)**" are intended to contact with food.

The requirements for products intended to come into direct contact with foodstuffs are given by Decree of the Health Ministry No. 38/2001 Coll., as amended (hereinafter referred to as Decree 38) and by European Parliament and Council Regulation No. 1935/2004 (hereinafter referred to as Regulation 1935). The client required also the assessment according to the requirements of German Recommendation BfR XXXVI *Paper and cardboard for foodstuffs* (hereinafter referred to as BfR XXXVI).

General requirements – decree 38, Regulation 1935, BfR XXXVI

The products intended to come into contact with foodstuffs shall be manufactured so that, under normal or foreseeable conditions of use, they do not transfer their constituents to food in quantities which could endanger human health or bring about an unacceptable change in the composition of the food or bring about a deterioration in the organoleptic characteristics thereof. The performed tests verified that the evaluated samples do not cause a deterioration of the organoleptic properties of the food (see the tables on the page 3 of this attest). The constituent transferring is discussed further.

Requirements for paper products – decree 38

- Assessment of base materials, additives, adjuvants and the other substances (§ 21, paragraph 1, § 22, paragraph 2) is not a part of this Attest.
- The moisture of products made of paper packaging shall be up to the limit of 8 % w/w. The conformity was proved by the test – see the table on the pages 4 and 5 of this Attest.
- Paper packaging for direct contact with foodstuffs shall not be used repeatedly – it is not supposed that the products will be repeatedly used.
- The products made of paper, cartons and cardboard shall meet hygienic requirements given by the part 4 of the supplement No. 12. The conformity was proved by the tests and the products meet all limit values. The test results are listed in the table on the pages 4 and 5 of this Attest.

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třída Tomáše Bati 299, Louky, 763 02 Zlín, Czech Republic
Testing Laboratory - D2

Attest No. 472118465-01

Requirements for paper products – BfR XXXVI

- Following requirements are valid for the cold water extract of the final products: maximum of 0.005 mg/kg of cadmium, 0.01 mg/kg of lead and 1.0 mg/l of aluminium. Hexavalent chromium shall not be detectable. The conformity was proved by the test – see the tables on the page 6 of this Attest.
- The final product shall not have preservative effects during foodstuffs contact (see the requirements of DIN EN 1104: Determination of the transfer of antimicrobial constituents) - the conformity was proved by the test and the results are mentioned on the pages 11 and 12.
- Contents of formaldehyde and glyoxal in the cold water extract of the final product are limited – the conformity was proved by the tests – see the test results in the tables on the pages 4, 5 and 8.
- The cold water extract of the final product shall not contain more than 25 µg/dm² of mixture of 5-chloro-2-methyl-4-isothiazolin-3-one (approx. 3 parts) and 2-methyl-4-isothiazolin-3-one (approx. 1 part) – the conformity was proved by the tests – see the test results in the tables on the page 8.
- Requirements for optical brighteners: The brighteners shall not migrate into foodstuffs - the conformity was proved by the test according to ČSN EN 648 – see the test results in the tables on the page 6. The LBA/M paper sample met the requirement for good stability of the fluorescent agent in all types of food. The LBG paper sample met the requirement for good stability of the fluorescent agent in all types of food, except acidic foods.
- Requirements for colorants: There must be no migration of colorants to the foodstuff. Testing is conducted according to DIN EN 646 – see the test results in the tables on the pages 8 and 9.
- Primary aromatic amines may not be released from the finished food contact material in a detectable amount. The detection limit is 0.01 mg/kg food or food simulant and applies to the sum of the released primary aromatic amines. Additionally, primary aromatic amines classified as carcinogens in classes 1A and 1B of the CLP Regulation (EC) 1272/2008 may not be released referred to the single substance with a detection limit of 0.002 mg/kg food or food simulant – the conformity was proved by the tests – see the test results in the table on the page 7.
- Substances restricted by SML in recycled papers are listed in Annex to BfR XXXVI. Specific migrations of these substances into distilled water and substitute fatty simulant (95% ethanol and isooctane) were verified for the submitted samples. The test results are listed in the tables on the page 9 -11. All test results meet the required limits. Diisopropyl-naphthalene content in the mass – see the tables on the page 11 of this Attest.

The opinion expressed and interpretation made by:

Dipl. Ing. Ludmila Zálešáková, February 28, 2025

Conclusion:

The comparison of the obtained results with the limits of Decree No. 38/2001 Coll., as amended, of German Recommendation XXXVI and of the article 3 of European Parliament and Council Regulation No. 1935/2004 and evaluation of the conformity with these regulations are mentioned on the page 1 of this attest.

Dipl. Ing. Daniel Vít
Head of the laboratory of analytical chemistry and microbiology

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